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By Helga's
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DRAFT OUTLINE OF TECHNICAL REQUIREMENTS
FOR STATEMENT OF WORK FOR A
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
DIAMOND HEAD OIL REFINERY
KEARNY, NEW JERSEY

INTRODUCTION

The purpose of this remedial investigation/feasibility study (RI/FS) is to investigate the nature and extent of contamination at the Diamond Head Oil Refinery Site ("the Site") and develop and evaluate potential remedial alternatives. The RI and FS are interactive and may be conducted concurrently so that the data collected in the RI influences the development of remedial alternatives in the FS, which in turn affects the data needs and the scope of treatability studies, if needed.

The respondent will conduct this RI/FS (except for the baseline risk assessment component) and will produce a draft RI and FS report that are in accordance with this statement of work, the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (U.S. EPA, Office of Emergency and Remedial Response, October 1988), and any other guidances that EPA uses in conducting a RI/FS, as well as any additional requirements in the administrative order. The RI/FS Guidance describes the report format and the required report content. The respondent will furnish all necessary personnel, materials, and services needed, or incidental to, performing the RI/FS, except as otherwise specified in the administrative order.

At the completion of the RI/FS, EPA will be responsible for the selection of a site remedy and will document this selection in a Record of Decision (ROD). The remedial action alternative selected by EPA will meet the cleanup standards specified in CERCLA Section 121. That is, the selected remedial action will be protective of human health and the environment, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements of other laws, will be cost-effective, will utilize permanent solutions and alternative ← treatment technologies or resource recovery technologies, to the maximum extent practicable, and will address the statutory preference for treatment as a principal element. The final RI/FS report, as adopted by EPA, and EPA's baseline risk assessment will, with the administrative record, form the basis for the selection of the site's remedy and will provide the information necessary to support the development of the ROD.

* As specified in CERCLA Section 104(a)(1), as amended by SARA, EPA will provide oversight of the respondent's activities throughout the RI/FS. The respondent will support EPA's

initiation and conduct of activities related to the implementation of oversight activities.

The RI/FS is conducted to gather sufficient data and information necessary to characterize the nature and extent of contamination in order to support the selection of a site remedy that will reduce or eliminate risks to human health or the environment associated with contamination at the site.

The way the RI/FS achieves its objectives is by determining the horizontal and vertical distribution and concentration of hazardous substances in the soil, in surface and ground water, and in the air, and their association with the site.

Before planning RI/FS activities, all existing site data will be thoroughly compiled and reviewed by the respondent. Specifically, this will include presently available data relating to the varieties and quantities of hazardous substances at the site, and past disposal practices. This will also include results from any previous sampling events that may have been conducted. The respondent will refer to Table 2-1 of the RI/FS Guidance for a comprehensive list of data collection information sources. This information will be utilized in determining additional data needed to characterize the site, better define potential applicable or relevant and appropriate requirements (ARARs), and develop a range of preliminarily identified remedial alternatives. Data Quality Objectives (DQOs) will be established subject to EPA approval which specify the usefulness of existing data. Decisions on the necessary data and DQOs will be made by EPA.

RI/FS Work Plan (2.3.1)

The respondent will submit a RI/FS work plan, a sampling and analysis plan, and a site health and safety plan. The RI/FS work plan and sampling and analysis plan must be reviewed and approved by EPA prior to the initiation of field activities.

The work plan should be developed in conjunction with the sampling and analysis plan and the site health and safety plan, although each plan may be delivered under separate cover. The work plan will include a comprehensive description of the work to be performed, including the methodologies to be utilized, as well as a corresponding schedule for completion. In addition, the work plan must include the rationale for performing the required activities. Specifically, the work plan will present a statement of the problem(s) and potential problem(s) posed by the site and the objectives of the RI/FS. Furthermore, the plan will include a site background summary setting forth the site description including the geographic location of the site, and to the extent possible, a description of the site's physiography, hydrology, geology, demographics, ecological, cultural and natural resource features; a synopsis of the site history and a description of previous responses that have been conducted at the site by local,

state, federal, or private parties; a summary of the existing data in terms of physical and chemical characteristics of the contaminants identified, and their distribution among the environmental media at the site.

The major part of the work plan is a detailed description of the tasks to be performed, information needed for each task and for EPA's baseline risk assessment, information to be produced during and at the conclusion of each task, and a description of the work products that will be submitted to EPA. This includes the deliverables set forth in the remainder of this statement of work; a schedule for each of the required activities which is consistent with the RI/FS guidance; and a project management plan, including a data management plan (e.g., requirements for project management systems and software, minimum data requirements, data format and backup data management), monthly reports to EPA and meetings and presentations to EPA at the conclusion of each major phase of the RI/FS. The respondent will refer to Appendix B of the RI/FS Guidance for a comprehensive description of the contents of the required work plan. Because of the unknown details of the site and iterative nature of the RI/FS, additional data requirements and analyses may be identified throughout the process. The respondent will submit a technical memorandum documenting the need for additional data, and identifying the DQOs whenever such requirements are identified. In any event, the respondent is responsible for fulfilling additional data and analysis needs identified by EPA consistent with the general scope and objectives of this RI/FS.

The respondent will prepare a sampling and analysis plan (SAP) to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data meet DQOs. The SAP provides a mechanism for planning field activities and consists of a field sampling plan (FSP) and a quality assurance project plan (QAPP).

The FSP will define in detail the sampling and data-gathering methods that will be used on the project. It will include sampling objectives, sample location and frequency, sampling equipment and procedures, and sample handling and analysis. The QAPP will describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that will be used to achieve the desired DQOs. The DQOs will at a minimum reflect use of analytical methods to identifying contamination and remediating contamination consistent with the levels for remedial action objectives identified in the proposed National Contingency Plan, pages 51425-26 and 51433 (December 21, 1988). In addition, the QAPP will address sampling procedures, sample custody, analytical procedures, and data reduction, validation, reporting and personnel qualifications. Field personnel should be available for EPA QA/QC training and orientation where applicable. The respondent will demonstrate, in advance to EPA's satisfaction, that each laboratory it may use is qualified to conduct the

proposed work. This includes use of methods and analytical protocols for the chemicals of concern in the media of interest within detection and quantification limits consistent with both QA/QC procedures and DQOs approved in the QAPP for the site by EPA. The laboratory must have and follow an approved QA program. If a laboratory not in the Contract Laboratory Program (CLP) is selected, methods consistent with CLP methods that would be used at this site for the purposes proposed and QA/QC procedures approved by EPA will be used. If the laboratory is not in the CLP program, a laboratory QA program must be submitted for EPA review and approval. EPA may require that the respondent submit detailed information to demonstrate that the laboratory is qualified to conduct the work, including information on personnel qualifications, equipment and material specifications. The respondent will provide assurances that EPA has access to laboratory personnel, equipment and records for sample collection, transportation and analysis.

Site Health and Safety Plan (2.3.3)

A health and safety plan will be prepared in conformance with the respondent's health and safety program, and in compliance with OSHA regulations and protocols. The health and safety plan will include the elements described in the RI/FS Guidance, such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and site control.

TASK 2 - COMMUNITY RELATIONS

The development and implementation of community relations activities are the responsibility of EPA. The critical community relations planning steps performed by EPA include conducting community relations plan. Although implementation of the community relations plan is the responsibility of EPA, the respondent may assist by providing information regarding the site's history, participating in public meetings, or by preparing fact sheets for distribution to the general public. EPA will prepare two or more baseline risk assessment memoranda which will summarize the toxicity assessment and components of the baseline risk assessment. EPA will make these memoranda available to all interested parties for comment and place them in the Administrative Record. (EPA is not required, however, to formally respond to significant comments except during the formal public comment period on the proposed plan.) In addition, the respondent may establish a community information repository, at or near the site, to house one copy of the administrative record. The extent of PRP involvement in community relations activities is left to the discretion of EPA. The respondents' community relations responsibilities, if any, are specified in the community relations plan. All PRP-conducted community relations activities will be subject to oversight by EPA.

TASK 3 - SITE CHARACTERIZATION (RI/FS Guidance, Chapter 3)

As part of the RI, the respondent will perform the activities described in this task, including the preparation of a site characterization summary and RI report. The overall objective of site characterization is to describe areas of a site that may pose a threat to human health or the environment. This is accomplished by first determining a site's physiography, geology, and hydrology. Surface and subsurface pathways of migration will be defined. The respondent will identify the sources of contamination and define the nature, extent, and volume of the sources of contamination, including their physical and chemical constitutes as well as their concentrations at incremental locations to background in the affected media. The respondent will also investigate the extent of migration of this contamination as well as its volume and any changes in its physical or chemical characteristics, to provide for a comprehensive understanding of the nature and of contamination at the site. Using this information, contaminant fate and transport is then determined and projected.

During this phase of the RI/FS, the work plan, SAP, and health and safety plan are implemented. Field data are collected and analyzed to provide the information required to accomplish the objectives of the study. The respondent will notify EPA at least two weeks in advance of the field work regarding the planned dates for field activities, including ecological field surveys, field lay out of the sampling grid, excavation, installation of wells, initiating sampling, installation and calibration of equipment, pump tests, and initiation of analysis and other field investigation activities. The respondent will demonstrate that the laboratory and type of laboratory analyses that will be utilized during site characterization meets the specific QA/QC requirements and the DQOS of the site investigation as specified in the SAP. In view of the unknown site conditions, activities are often iterative, and to satisfy the objectives of the RI/FS it may be necessary for the respondent to modify the work specified in the initial work plan. In addition to the deliverables below, the respondent will provide a monthly progress report and participate in meetings at major points in the RI/FS.

a. Field Investigation (3.2)

The field investigation includes the gathering of data to define site physical and biological characteristics, sources of contamination, and the nature and extent of contamination at the site. These activities will be performed will be performed by the respondent in accordance with the plan and SAP. At a minimum, this shall address the following:

Implement and document field support activities (3.2.1)

The respondent will initiate field support activities following approval of the work plan and SAP. Field support activities may

include obtaining access to the site, scheduling, and procuring equipment, office space, laboratory services, and/or contractors. The respondent will notify EPA at least two weeks prior to initiating field support activities so that EPA may adequately schedule oversight tasks. The respondent will also notify EPA in writing upon completion of field support activities.

Investigate and define site physical and biological characteristics (3.2.2)

The respondent will collect data on the physical and biological characteristics of the site and its surrounding areas including the physical physiography, geology, and hydrology, and specific physical characteristics identified in the work plan. This information will be ascertained through a combination of physical measurements, observations, and sampling efforts and will be utilized to define potential transport pathways and human and ecological receptor populations. In defining the site's physical characteristics the respondent will also obtain sufficient engineering data (such as pumping characteristics) for the projection of contaminant fate and transport, and development and screening of remedial action alternatives, including information to assess treatment technologies.

Define sources of contamination (3.2.3)

The respondent will locate each source of contamination. For each location, the areal extent and depth of contamination will be determined by sampling at incremental depths on a sampling grid. The physical characteristics and chemical constituents and their concentrations will be determined for all known and discovered sources of contamination. The respondent shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the QA/QC plan and DQOs.

Defining the source of contamination will include analyzing the potential for contaminant release (e.g., long term leaching from soil), contaminant mobility and persistence, and characteristics important for evaluating remedial actions, including information to assess treatment technologies.

Describe the nature and extent of contamination (3.2.4)

The respondent will gather information to describe the nature and extent of contamination to describe the nature and extent of contamination as a final step during the field investigation. To describe the nature and extent of contamination, the respondent will utilize the information on site physical and biological characteristics and sources of contamination to give a preliminary estimate of the contaminants that may have migrated. The respondent will then implement an iterative monitoring program and any study program identified in the work plan or SAP such that by using analytical techniques sufficient to detect and quantify the concentration of

contaminants, the migration of contaminants through the various media at site can be determined. In addition, the respondent will gather data for calculations of contaminant fate and transport. This process is continued until the area and depth of contamination are known to the level of contamination established in the QA/QC plan and DQOs. EPA will use the information on the nature and extent of contamination to determine the level of risk presented by the site. Respondents will use this information to help to determine aspects of the appropriate remedial action alternatives to be evaluated.

b. Data Analysis (3.4)

Evaluate site characteristics (3.4.1)

The respondent will analyze and evaluate the data to describe: (1) site physical and biological characteristics, (2) contaminant source characteristics, (3) nature and extent of contamination and (4) contaminant fate and transport. Results of the site physical characteristics, source characteristics, and extent of contamination analyses are utilized in the in the analysis of contaminant fate and transport. The evaluation will include the actual and potential magnitude of releases from the sources, and horizontal and vertical spread of contamination as well as mobility and persistence of contaminants. Where modeling is appropriate, such models shall be identified to EPA in a technical memorandum prior to their use. All data and programming, including any proprietary programs, shall be made available to EPA together with a sensitivity analysis. The RI data be presented in a format (i.e., computer disk or equivalent) to facilitate EPA"s preparation of the baseline risk assessment. The Respondent shall agree to discuss and then collect any data gaps identified by the EPA that is needed to complete the baseline risk assessment. (See "Guidance for Data Useability in Risk Assessment - OSWER Directive # 9285.7- 05 - October 1990.) Also, this evaluation shall any information relevant to site characteristics necessary for evaluation of the need for remedial action in the baseline risk assessment and for the development and evaluation of remedial alternatives. Analysis of data collected for site characterization will meet the DQOS developed in the QA/QC plan stated in the SAP (or revised during the RI).

c. Data Management Procedures (3.5)

The respondent will consistently document the quality and validity of field and laboratory data complied during the RI.

Document field activities (3.5.1)

Information gathered during site characterization will be consistently documented and adequately recorded by the respondent in well maintained field logs and laboratory reports. The method(s) of documentation must be specified in the work plan

and/or the SAP. Field logs must be utilized to document observations, measurements, and significant events that have occurred during field activities. Laboratory reports must document sample custody, analytical responsibility, analytical results, adherence to prescribed protocols, nonconformity events, corrective measures, and/or data deficiencies.

Maintain sample management and tracking (3.5.2; 3.5.3.)

The respondent will maintain field reports, sample shipment records analytical results, and QA/QC reports to ensure that only validated analytical data are reported and utilized in the evaluation of remedial alternatives. Analytical results developed under the work plan will not be included in any site characterization reports unless accompanied by or cross-referenced to a corresponding QA/QC report. In addition, the respondent will establish a data security system to safeguard chain-of custody forms and other project records to prevent loss, damage, or alteration of project documentation.

d. Site Characterization Deliverables (3.7)

The respondent will prepare the preliminary site characterization summary and the remedial investigation report.

Preliminary Site Characterization Summary (3.7.2)

After completing field sampling and analysis, the respondent will prepare a concise characterization summary. This summary will review the investigative activities that have taken place, and describe and display site data documenting the location and characteristics of surface and subsurface feature and contamination at the site including the affected medium, types, location types, physical state, concentration of contaminants and quantity. In addition, the location, dimensions, physical condition and varying concentrations of each contaminant throughout each source and the extent of contaminant migration through each of the affected media will be documented. The site characterization summary will provide EPA with a preliminary reference for developing the risk assessment, and evaluating the development and screening of remedial alternatives and the refinement and identification of ARARs.

Remedial Investigation (RI) (3.7.3)

The respondent will prepare and submit a draft RI report to EPA for review and approval. This report shall summarize results of field activities to characterize the site, sources of contamination and the fate and transport of contaminants. The respondent will refer to the RI/FS Guidance for an outline of the report format and contents. Following comment by EPA, the respondent will prepare a final RI report which satisfactorily addresses EPA's comments.

Task 5 - DEVELOPMENT AND SCREENING OF Remedial Alternatives (RI/FS Manual, Chapter 4)

The development and screening of remedial alternatives is performed to develop an appropriate range of waste management options that will be evaluated. This range of alternatives should include as appropriate, options in which treatment is used to reduce the toxicity, mobility, or volume of wastes, but varying in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; options involving containment with little or no treatment; options involving both treatment and containment; and a no-action alternative. The following activities will be performed as a function of the development and screening of remedial alternatives.

a. Development and Screening of Remedial Alternatives (4.2)

The respondent will begin to develop and evaluate a range of appropriate Waste management options that a minimum ensure protection of human health and the environment, concurrent with the RI site characterization task.

Develop general response action(4.2.2)

The respondent will develop general actions for each medium of interest defining containment, treatment, excavation, pumping, or other actions, singly or in combination, to satisfy the remedial action objectives.

Identify areas or volumes of media (4.2.3)

The respondent will identify areas or volumes of media to which general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. The chemical and physical characterization of the site will also be taken into account.

Assemble and document alternatives (4.2.6)

The respondent will assemble selected representative technologies into alternatives for each affected medium or operable unit.

Together, all of the alternatives will represent a range of treatment and containment combinations that will address either the site or the operable unit as a whole. A summary of the assembled alternatives and their related action-specific ARARS will be prepared by the respondent for inclusion in a technical memorandum.

The reasons for eliminating alternatives during the preliminary screening process must be specified.

Refine alternatives

The respondent will refine the remedial alternatives to identify contaminant volume addressed by the proposed process and sizing of critical unit operations as necessary. Sufficient information will be collected for an adequate comparison of alternatives. PRGs for each chemical in each medium will also be modified as necessary to incorporate any new risk assessment information presented in EPA's baseline risk assessment report. Additionally, action-specific ARARs will be updated as the remedial alternatives are refined.

Conduct and document screening evaluation of each alternative (4.3)

The respondent may performed a final screening process based on short and long term aspects of effectiveness, implementability, and relative cost. Generally, this screening process is only necessary when there are many feasible alternatives available for detailed analysis. If necessary, the screening of alternatives will be conducted to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis. As appropriate, the screening will preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives will include options that use treatment technologies and permanent solutions to the maximum extent practicable. The respondent will prepare a technical memorandum summarizing the results and reasoning employed in screening, arraying alternatives that remain after screening, and identifying the action-specific ARARs for the alternatives that remain after screening.

b. Alternatives Development and Screening Deliverables (4.5)

The respondent will prepare a technical memorandum summarizing the work performed in and the results of each task above, including an alternatives array summary. These will be modified by the respondent if required by EPA's comments to assure identification of a complete and appropriate range of viable alternatives to be considered in the detailed analysis. This deliverable will document the methods, rationale, and results of the alternatives screening process.

TASK 6 - DETAILED ANALYSIS OF REMEDIAL ALTERNATIVES (RI/FS Guidance, Chapter 6)

The detailed analysis will be conducted by the respondent to provide EPA with the information needed to allow for the selection of a site remedy. This analysis is the final task to be performed by respondent during the FS.

a. Detailed Analysis of Alternatives (6.2)

The respondent will conduct a detailed analysis of alternatives which will consist of an analysis of each option against a set of nine evaluation criteria and a comparative analysis of all options using the same evaluation criteria as a basis for comparison.

Apply nine criteria and document analysis (6.2.1 - 6.2.4)

The respondent will apply nine evaluation criteria to the assembled remedial alternatives to ensure that the selected remedial alternative will be protective of human health and the environment; will be in compliance with, or include a waiver of, ARARS; will be cost- effective; will utilized permanent solutions and alternative treatment technologies,or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria include: (1) overall protection of human health and the environment; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) state (or support agency) acceptance; and (9) community acceptance.

(Note: criteria 8 and 9 are considered after the RI/FS report has been released to the general public.) For each alternative the respondent should provide: (1) a description of the alternative that outlines the waste management strategy involved and identifies the key ARARs associated which each alternative, and (2) a discussion of the individual criterion assessment. If the respondent does not have direct input on criteria (8) state (or support agency) acceptance and (9) community acceptance, these will be addressed by EPA.

Compare alternatives against each other and document the comparison of alternatives (6.2.5; 6.2.6)

The respondent will perform a comparative analysis between the remedial alternatives. That is, each alternative will be compared against the others using the evaluation criteria as a basis of comparison. Identification and selection of the preferred alternative are reserved by EPA. The respondent will prepare a technical memorandum summarizing the results of the comparative analysis.

b. Detailed Analysis Deliverables (6.5)

In addition to the technical memorandum summarizing the results of the comparative analysis, the respondent will submit a draft FS report to EPA for review and approval. Once EPA's comments have been addressed by the respondent to EPA's satisfaction, the final FS report may be bound with the final RI report.

Feasibility study report (6.5)

The respondent will prepare a draft FS report for EPA review and comment. This report, as ultimately adopted or amended by EPA, provides a basis for remedy selection by EPA and documents the development and analysis of remedial alternatives. The respondent will refer to the RI/FS Guidance for an outline of the report format and the required report content. The respondent will prepare a final FS report which satisfactorily addresses EPA's comments.

FACSIMILE REQUEST AND COVER SHEET

U.S. Environmental Protection Agency
Region II
Emergency and Remedial Response Division
290 Broadway 19th Floor
New York, New York 10007

Date: 10/15/97

SUBJECT: Statement of Work - Draft Outline

TO: Mike Snyder

OFFICE: NJ Gov. Relations &

☎PHONE NUMBER: 201-460-8904

FAX NUMBER: 201-460-7595

FROM: G. V. Diaz-Cotto

OFFICE: ERRB

☎PHONE NUMBER: 212-637-4430

FAX NUMBER: **212 637-4429**

Number of Pages (including cover sheet): 13

Message:

FACSIMILE REQUEST AND COVER SHEET

U.S. Environmental Protection Agency
Region II
Emergency and Remedial Response Division
290 Broadway 19th Floor
New York, New York 10007

Date: 12/15/97

SUBJECT: Statement of Work - Draft Outline

TO: Mike Snyder

OFFICE: MS Gov. Relations &

☎PHONE NUMBER: 201-460-8904 FAX NUMBER: 201-460-7595

FROM: G. V. Diaz-Colon

OFFICE: ERRB

☎PHONE NUMBER: 212-637-4430 FAX NUMBER: 212 637-4429

Number of Pages (including cover sheet): 13

Message:

**********CCMM.JOURNAL********** DATE DEC-15-1997 ***** TIME 10:32 *** P.01

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